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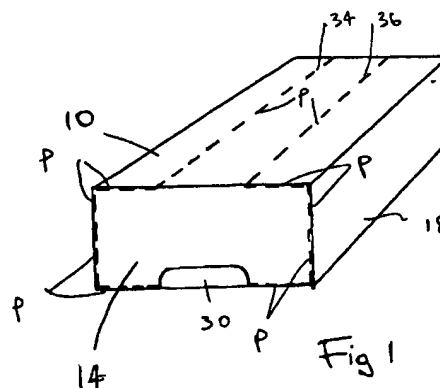
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(54) **Tear-open folded box**

(57) A container for the loading of shelves comprising a top (10), base (12), two sides (18, 20) and the two ends (14, 16) in which one end (14) is completely removable and the other end (16) partially or completely removable, so that when the container is to be emptied, one end (14) is removed, the container placed on a shelf with the open end towards the rear of the shelf, and the other end (16) is removed or partially removed, allowing the contents to be held while the container is pulled away from the contents, leaving them on the shelf.



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Description

[0001] The present invention concerns improvements in or relating to containers, particularly but not exclusively containers for other packaged items, for example cans, bottles, packets and sachets.

[0002] It is important when loading the contents of containers onto shelves in shops and supermarkets to carry out the transfer from container to shelf in the shortest possible time and in the most convenient manner. Many containers are unloaded and restacked on the shelf article by article. Clearly this is time consuming and inconvenient. In one attempt to overcome this problem containers are provided with tear-off panels so that the container and its contents can be placed on the shelf with the contents displayed and readily removable from the container. This still presents certain disadvantages, for example the container may not be considered as aesthetically pleasing, it provides an obstacle when it is empty, etc.

[0003] It is an object of the present invention to obviate or mitigate these and other disadvantages.

[0004] According to the present invention there is provided a container having a top, a base, two sides and two ends between the top and base in which one end is completely removable and the other completely or partially removable so that on reaching a position where the container has to be emptied, one end is removed, the container is placed on the surface on which its contents have to be deposited with the open end to the rear of the surface and the other end is removed or partially removed to enable the contents to be held while the remaining container is pulled away from the contents leaving them on the surface.

[0005] Preferably said one end has perforations around its periphery or part of its periphery to facilitate its removal. An aperture may be provided in said one end, preferably at the base edge thereof. Preferably the top of the container includes a pair of longitudinal lines of perforations to provide a tear off panel at a central region of the top. Part of the top edge of the end, between said longitudinal lines of perforations in the top, has no perforation.

[0006] Preferably both ends have perforations around their peripheries extending from the ends of said longitudinal lines of perforations. Alternatively the other end has an aperture therein and perforations extending from said aperture to the top edge. Preferably the perforations from said aperture on the other end are continuations of said longitudinal lines of perforations.

[0007] In an alternative arrangement at least one end includes separation means to facilitate its removal. The other end may also include separation means.

[0008] Preferably the separation means comprises a relatively strong elongate member attached along the line of separation to the internal surface of the container such that by pulling on one or both ends of the elongate member, the container can be torn to allow the end to

be removed.

[0009] Preferably the separation means are located at the connection of the ends to the sides, base and top of the container.

[0010] In another arrangement perforations are provided on at least one of the top and sides of the container, extending from the ends of the edge between the respective top or side and the end, the remaining edge or edges being provided with perforations along the edge.

[0011] Preferably perforations of the type described in the preceding paragraph are provided in both sides and the top.

[0012] Preferably said perforations are formed in two lines defining with the edge alongside which they extend a triangle or arc.

[0013] Preferably an aperture is formed at the apex of the triangle or arc.

[0014] Preferably one end of the container is provided with perforations as described in the preceding four paragraphs. Preferably the other end has a line of perforations along its lower edge and two further lines of perforations extending upwardly and inwardly from the ends of said edge to join at an apex whereby a triangular aperture can be provided through said end. An aperture may be formed through the other end at said apex. Alternatively both ends of the container can be provided with perforations as described in the preceding four paragraphs.

[0015] In a further alternative arrangement the top and sides of the container are formed as a sleeve and the ends are formed from a separate piece of material extending over part or all of each open end of the sleeve. Preferably the or each separate piece of material is fixed to the sides of the sleeve. Preferably the fixing is removable. Preferably the fixing comprises an adhesive fixing the piece to the side at a weakened area of the piece. Preferably the weakened area is formed by a surround of perforations. The pieces for each end may be part of a band of material encircling the ends and sides.

[0016] In a further alternative arrangement the or each separate piece is formed as an end cap comprising an end covering piece with flanges extending from its edges, the flanges encircling end regions of the top, base and sides and being removably fixed to at least some of said regions.

[0017] In a still further alternative arrangement one end of the container has flaps extending from its side edges, each of which extends over an end region of the neighbouring container side and is removably fixed thereto, and the top and bottom edges of the end include perforations or other separation means whereby the end is removable from the container by detaching a flap from the side, tearing along the top and bottom edges and removing the other flap.

[0018] Preferably both ends have flaps and perforations as described in the preceding paragraph.

[0019] Preferably the flaps are fixed to the sides by adhesive at weakened areas of the flaps. Preferably the weakened areas are surrounded by perforations.

[0020] Preferably the perforations along the top and bottom edges are broken by spaced apertures formed at the junction between the end and top/base of the container.

[0021] According to one preferred form of the present invention there is provided a container including a base, a top and four upstanding walls between the base and the top, the top including a pair of longitudinal lines of perforations through the material to provide a tear-off panel at the central region of the top, one wall defining an end of the panel having perforations around all of its periphery except that portion thereof connected to the tear-off panel and the wall defining the other end having an aperture formed or formable therein.

[0022] According to a second preferred form of the present invention there is provided a container having two removable ends, the ends including separation means comprising relatively strong elongate members attached along the line of separation to the internal surface of the container such that by pulling on one or both ends of the elongate member the container can be torn to allow the end to be removed.

[0023] According to a third preferred form of the present invention there is provided a container having a top, a base, two upstanding sides and two upstanding ends between the top and the base, in which at least one end, the top and side include a line or lines of perforations or separation means extending from one end of the edge between the top/sides and the end, and a line of perforation or separation means is provided along the edge between the end and the base of the container, whereby said end can be removed together with the end regions of the top/sides defined by the perforation or separation means.

[0024] Preferably both ends of the container are similar. Alternatively one end can have an aperture formed therethrough by removing part of said end.

[0025] According to a fourth preferred aspect of the present invention a container comprises an open-ended sleeve and ends formed by removable pieces of material extending over at least part of the end and the end regions of the sides adjacent the ends and being removably fixed to the sides.

[0026] Preferably the pieces covering the end are part of a continuous band of material encircling the sleeve.

[0027] According to a fifth preferred aspect of the present invention there is provided a container comprising an open-ended sleeve having a top, base and side walls extending between the top and the base, the ends of the container being covered by flanged caps, the flanges of which extend over end regions of the container and are removably attached thereto.

[0028] According to a sixth preferred form of the present invention there is provided a container compris-

ing a top, a base, opposed sides between the top and the base and each comprising two flaps, one hinged to the top the other to the base, means for joining the flaps together to form a side and two ends fixed to the top and base along edges therebetween and including flaps extending from the other edges over end portions of the sides, the flaps being removably affixed to the sides and the edges between the top and base and the end including perforations or separation means such that the or each end can be removed by pulling a flap away from the side, tearing along the lines of perforations or separating means and removing or folding back the end.

[0029] Further according to the present invention there is provided a method of unpacking a container comprising removing an end panel to open one end of the container and while its contents remain in the container, arranging the open end of the container on a surface where its contents have to be stacked with the open end towards the rear of the surface, providing an aperture in the other end of the container and whilst holding the contents of the container through said aperture pulling the container away from its contents.

[0030] Preferably the entire other end of the panel is removed to provide the aperture thereon. Alternatively only part of the other end is removed.

[0031] Preferably the aperture in or at the ends are formed by removing areas of container enclosed by perforations. Alternatively the areas are removed by tearing by pulling on an elongate member fixed to the container.

[0032] Preferably a panel is removed from the top of the container, the panel extending between the container ends. The panel may be removed by tearing the container along lines of perforations or by tearing with the aid of elongate members fixed to the container in alignment with the tear lines.

[0033] Embodiments of the present invention will now be described by way of example only, with reference to the accompanying drawing in which :-

Fig. 1 shows a perspective view from the front, above and one side of an erected container;

Fig. 2 shows a blank of corrugated board from which the container of Fig. 1 is erected;

Fig. 3 shows a perspective view from the front, above and one side of a modified erected container;

Fig. 4 shows a blank of corrugated board from which the container of Fig. 3 is erected;

Fig. 5 shows a perspective view from the front, above and one side of another erected container;

Fig. 6 shows a perspective view of the container of Fig. 5 from its other end;

Fig. 7 shows a perspective view from the front, above and one side of another erected container;

Fig. 8 shows a perspective view from the front, above and one side of a still further erected container; and

Fig. 9 shows a perspective view from the front,

above and one side of a yet further erected container.

[0034] A rectangular prismatic container is manufactured from corrugated board, the type of which is chosen to suit the conditions in which the container is being used. Additionally the direction of the flutes of the corrugations can be chosen in accordance with the uses of the container. As neither the material or the direction of corrugations forms part of the present invention they will not be described in detail in this specification. The precise means of constructing and erecting the container do not form part of the present invention and can take any particular form although one simple form will be described below.

[0035] The container comprises a rectangular top 10 and base 12, four upstanding sides defining two ends 14, 16 and two longer sides 18, 20. The sides 18, 20 are of double thickness formed by transverse extensions from the top and base 10, 12 which are glued together to form the sides 18, 20 and the ends 14, 16 are provided with transverse extensions 22, 24 to form corner tabs for connecting the ends to the sides. One end 16 has a top tab 26 to connect the end 16 with the base 12. According to normal construction techniques the transverse extensions and tabs have fold lines M at their junction with the top and ends and it will be realised that by gluing, stapling or other conventional techniques, a rectangular, prismatic carton can be erected from the blank.

[0036] The carton is provided with plurality of lines of perforation which are designated in the drawings by the letter P and each end 14, 16 has a finger aperture 30, 32 therethrough. Two parallel lines of perforation 34, 36 are provided along the top 10 of the carton from one end 14 to the other end 16. Perforations are provided also around the periphery of the end 14 except at the fold line joining the panel of the top between the perforations 36 to the end. The perforations 34, 36 extend down the other end 16 to the aperture 32. It will be appreciated, therefore, that there is provided a T-shaped tear-off panel comprising the end 14, the centre tear off panel of the top 10 and part of the opposite end 16.

[0037] The container is filled with products, for example rows of cans, bottles, packets or sachets and is transported, in a closed condition, to the point of use i.e. the shelf of a supermarket. The shelf loader, by utilising the aperture 30 tears-off the end 14 and tears along the perforation lines 34, 36 optionally tearing down to the aperture 32 to remove the panel or alternatively folding over the partially removed panel along the fold line at the junction of the tear off panel with the end 14. The container is thus placed on the shelf to receive the container's contents with the open end at the back of the shelf. The T-shaped panel is then completely removed (if it has not already been removed) and by pulling the container away from its contents, which are held against

movement by a hand passing through the aperture in the end 16 and through the panel in the top 10 of the container, the container is removed leaving the items which had been contained therein on the shelf top, effectively undisturbed.

[0038] Various modifications can be made without departing from the scope of the embodiment of the invention described with reference to Figs. 1 and 2. For example the entire top of the carton can be removed by providing perforations along the fold lines joining the top 10 to the sides 18. Any alternative container construction means may be employed. The entire other end panel can be removed.

[0039] Fig. 3 shows another rectangular prismatic container made from corrugated board of any suitable type with the corrugations running in any suitable direction. This container is made from the blank shown in Fig. 4 and has a top 110, a base 112, two ends 114, 116 and two upstanding sides 118, 120. The construction of the container is relatively standard and manufactured from a substantially rectangular blank as shown in Fig. 4 where the top, sides, ends and base are defined by fold lines M and are formed into a rectangular tube by gluing a flap 117 from one edge of the side 116 to the inner surface of the top 110. Each side/top/base panel has a flap 119 extending therefrom along a fold line M which, by folding and gluing, form the ends 114, 116. An incision 121 is formed at the end of the fold line M between the panels 119 and the top 110 and a relatively strong elongate member 123 for example, of a plastics material, extends along the entire length of the blank, that is around the entire periphery of each end 114, 116 of the assembled container. Conveniently the elongate member is fixed to the inner surface of the container by adhesive or fusion.

[0040] A container of this nature is packed with its contents in the normal way, the contents being, for example cans, bottles, packets or sachets and when it has to be unloaded onto the shelf, the shelf loader grips the end of the elongate member 123 at the incision 121 at one end 14 of the container and, by pulling the elongate member 123, separates the end 114 from the container. The container is then placed on the shelf with its open end 114 towards the rear of the shelf and by pulling on the other elongate member 123, the other end 116 of the container can be removed. The container is unloaded by the shelf loader who holds the contents at the forwardly facing open end 116 with one hand while pulling the remaining sleeve of the container away from its contents, thereby leaving the contents on the shelf, effectively undisturbed.

[0041] Various modifications can be made without departing from the scope of the invention as described in Figs. 3 and 4. For example to assist in the separation of the ends, perforations may be provided along the line of the elongate member 123. The container can be assembled from any suitable material utilising any suitable construction technique. After use the container is

easily flattened to give, together with the removed ends, three flat items for disposal.

[0042] Figs. 5 and 6 show a further embodiment. Once again a container is constructed from corrugated board of any suitable type and strength with the flutes running in any preferred direction. Additionally the blank from which the container is formed can take any suitable shape and does not form part of the present invention and consequently will not be described in detail. The container has a rectangular top 210, a base and four upstanding sides defining two ends 214, 216 and two sides 218, 220. One end of the container of this embodiment is removable utilising lines of perforations P which are formed respectively in the sides 218, 220, the top 210 and along the edge between the base and end 214. The perforations in the top 210 comprise two lines inclined to the edge between the top 210 and the end 214, these lines of perforations 215, 217 meeting at an apex 219 which is provided with a finger aperture 222. Similar perforation lines 224, 226 are provided in each side 218, 220 and a line of perforations 227 is formed along the edge between the base and end 214. It will be realised that by inserting a finger through finger aperture 222 and pulling up the triangular area at the end region of the top 210, the top will tear along the perforation lines 215, 217 and the tear will extend down the sides along the perforation lines 226, 224. The entire end can then be removed by tearing along the line of perforations 227.

[0043] An aperture is provided in the other end 216 to enable the contents to be held on the shelf where they have to be unloaded as the container is pulled away from them. The aperture may be formed by providing another end arrangement as described with reference to Fig. 5 so that the entire other end is removed or alternatively, and preferably, to maintain some rigidity in the remaining sides, top and base only part of the end 216 is removed. Fig. 6 shows that this is achieved by arranging a pair of inclined perforation lines 221, 223 extending from the ends of the base edge of the end 216 inwardly to a finger aperture 228, a further line of perforations 225 being provided along said base edge. By inserting a finger into aperture 228 and pulling outwardly and downwardly a triangular aperture is provided.

[0044] Fig. 7 shows a further preferred embodiment in which the container comprises a sleeve formed from any suitable material according to any suitable construction techniques and comprising a base, a top 310 and sides 318, 320. The container has open ends 314 which, after it has been packed, are closed off by fitting a continuous band 324 of corrugated board or any other suitable material around the sides and opened ends. As shown in the drawing the band 324 only partially covers the ends 314 but by increasing its width it could be arranged to cover the entire end. The band 324 is affixed to the sides 318, 320 by adhesive, stapling, stitching or any other fixing means at weakened areas

326, the weakened area being formed by surrounding it with perforation lines 325. Further perforation or separation lines 327 are formed through the band 324 so that to open an end of the container, the band 324, at the open end is gripped and pulled away from the container, the perforations 325 and 327 allowing this to happen.

[0045] In a modification of the embodiment shown in Fig. 7, the band is not continuous and terminates at the perforation lines 327.

[0046] A still further embodiment of the present invention is illustrated in Fig. 8. This embodiment is based on a method of container construction known as BLISS-BOX (Registered Trade Mark). This method of construction does not form part of the present invention and will not be described in detail but it involves erecting cartons at the user's premises rather than in a carton making factory and utilises three blanks, one to form the body of the carton which takes the form of a sleeve, the others to form flanged end caps.

[0047] Fig. 8 shows a carton having a top 410, a base 412 and two upstanding sides 416, 418 between the base and top. This sleeve-like structure is manufactured from any suitable material according to any suitable construction techniques which do not form part of the present invention and will not be described. The ends of the container are formed by flanged end caps 420, 422, the flanges 424 of which overlie end regions of the sides 416, 418, base 412 and top 410. In a modified arrangement the flanged end caps could be located within the sleeve. They are secured to the sleeve by adhesive, stitching, stapling or any other suitable means at weakened areas 426 surrounding by perforation lines 425.

[0048] To remove an end from this container it will be apparent that the shelf loader will pull away the connection between the flanges 424 and the sides 416, 418, this being provided for by the line of perforations 425 surrounding the fixing area. He/she is then in a position where the end cap can be pulled off.

[0049] The container unloading procedure is then the same as that used for any of the embodiments described above, that is the loaded container is placed on the shelf with its open end to the rear of the shelf and with the other end of the container removed or an aperture formed therethrough, the container is pulled away from its contents which are held against movement by the loader passing a hand through the open other end of the container.

[0050] A further embodiment of the present invention is illustrated in Fig. 9. This embodiment is based on a carton formed to the standard design BS 0201. In cartons of this nature a rectangular, prismatic carton is formed, normally with four upstanding sides and a base and top each formed by four flaps which extend inwardly from the bottom and top edges of the sides and are glued to form the overlapping base and top of the container. In the embodiment described with reference to Fig. 9 what would normally be the top and base of a

type BS 0210 carton, that is the faces of the carton formed by four overlapping flaps, form the equivalent of the sides of the containers described in the preceding Figures.

[0051] Thus Fig. 9 shows a rectangular prismatic container formed from corrugated board or any suitable material by any suitable container erecting technique such that it provides a top 510, a base 512, two ends 514 and two sides 518,520. The sides 518,520 are effectively formed by two overlapping panels 522,524 which are fixed together to form the unitary side 518. The ends 514 are provided with lines of perforation 515,517 at the edges between the end 514 and top 510 and base 512 respectively. Flaps 526,528 are formed from the side edges of the end 514 and are folded back along the sides 518 and fixed thereto at weakened areas 530 surrounded by lines of perforation 531.

[0052] With the carton of this embodiment, to open at one end, the user pulls a flap 526 away from the side 518 rupturing the flap 526 along the line of perforation 531. He can then separate the end from the container by tearing along the perforation lines 515,517 and finally entirely removing the end by separating the other flap from the other side 520 by rupturing the perforations 531 encircling the weakened area 530.

[0053] In this embodiment both ends of the container have this construction so that the unloading procedure is, as before, to remove one end of the container, place the container with its contents on the shelf with the open end towards the rear of the shelf, remove the other end and then remove the remaining container sleeve by pulling it away from the contents, which are held in position on the shelf.

[0054] In a modification illustrated in Fig. 9 which is applicable to any figure incorporating perforation lines P, to make the tearing action more simple apertures 533 may be formed along the line of perforations, for example line 517 in Fig. 9.

[0055] It will be realised that whereas in the embodiments described with reference to the drawings certain arrangements of features have been combined to one embodiment, features may be interchanged between embodiments.

Claims

1. A container having a top (10), a base (12), two sides (18, 20) and two ends (14, 16) between the top (10) and base 12 characterised in that one end (14) is completely removable and the other (16) completely or partially removable so that on reaching a position where the container has to be emptied, one end (14) is removed, the container is placed on the surface on which its contents have to be deposited with the open end (14) to the rear of the surface and the other end (16) is removed or partially removed to enable the contents to be held while the remaining container is pulled away from

the contents leaving them on the surface.

2. A container as claimed in claim 1, characterised in that an aperture 30 is provided in said one end (14) at the base edge of the end (14), the top of the container includes a pair of longitudinal lines of perforations (34, 36) to provide a tear off panel at a central region of the top (10) and that part of the top edge of the said one end, between said longitudinal lines of perforations (34, 36) in the top (10), have no perforations.
3. A container as claimed in claim 2, characterised in that the other end (16) has an aperture (32) therein and perforations P extending from said aperture (32) to the top edge, said perforations being continuations of said longitudinal lines.
4. A container as claimed in claim 1, characterised in that the separation means are included at the or each end and comprises a relatively strong elongate member (123) attached along the line of separation to the internal surface of the container such that by pulling on one or both ends of the elongate member (123), the container can be torn to allow the end to be removed.
5. A container as claimed in claim 1, characterised in that perforations P are provided on at least one of the top (210) and sides (218, 220) of the container, extending from the ends of the edge between the respective top or side and the end, the remaining edge or edges being provided with perforations along the edge.
6. A container as claimed in claim 5, characterised in that the perforations (224, 226, 215, 217) are formed in lines defining with the edge alongside which they extend a triangle or arc and in that an aperture (222) is formed at the apex of the triangle or arc.
7. A container as claimed in claim 5 or claim 6, characterised in that the other end has a line of perforations (225) along its lower edge and two further lines of perforations (221,223) extending upwardly and inwardly from the ends of said edge to join at an apex whereby a triangular aperture is provided through said end.
8. A container as claimed in claim 1, characterised in that the top and sides of the container are formed as a sleeve and the ends are formed from a separate piece of material (324) extending over part or all of each open end of the sleeve and removably fixed to the sides of the sleeve.
9. A container as claimed in claim 8, characterised in

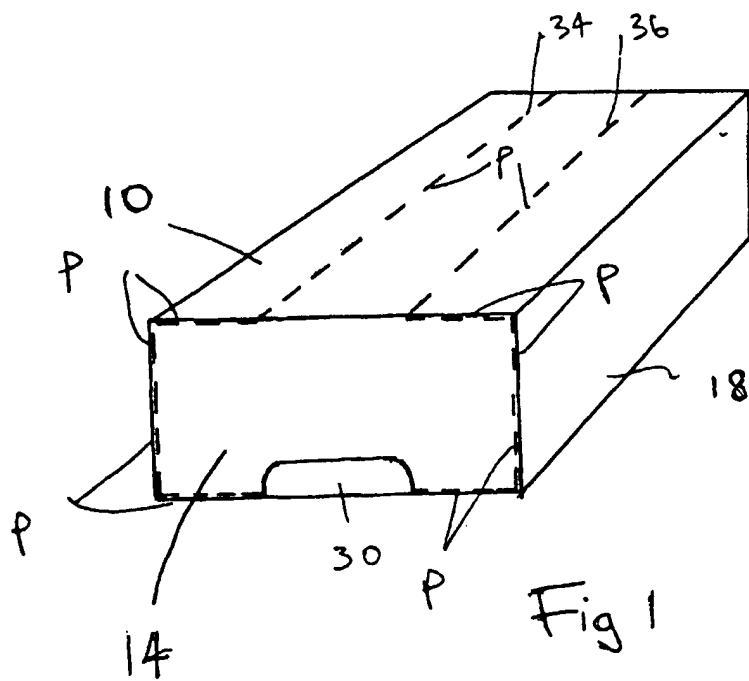
that the fixing comprises an adhesive fixing the piece (324) to the side at a weakened area (326) of the piece.

10. A container as claimed in claim 8, characterised in 5
that the pieces (324) for each end are part of a
band of material encircling the ends and sides.
11. A container as claimed in claim 8 or 9,, character- 10
ised in that the or each separate piece is formed as
an end cap (420, 422) comprising an end covering
piece (414) with flanges (424) extending from its
edges, the flanges 424 encircling end regions of the
top (410), base (412) and sides (416, 418) and
being removably fixed to at least some of said 15
regions.
12. A container as claimed in claim 1, characterised in
that at least one end of the container has flaps 20
(526) extending from its side edges, each of which
extends over an end region of the neighbouring
container side (518) and is removably fixed thereto,
and the top and bottom edges of the end include
perforations P or other separation means whereby 25
the end is removable from the container by detach-
ing a flap (526) from the side (518), tearing along
the top and bottom edges and removing the other
flap.
13. A container as claimed in claim 12, characterised in 30
that the flaps (526, 528) are fixed to the sides by
adhesive at weakened areas (530) of the flaps.
14. A method of unpacking a container characterised in 35
that the method comprises removing an end panel
(14) to open one end of the container and while its
contents remain in the container, arranging the
open end of the container on a surface where its
contents have to be stacked with the open end 40
towards the rear of the surface, providing an aper-
ture (32) in the other end (16) of the container and
whilst holding the contents of the container through
said aperture (32) pulling the container away from
its contents.

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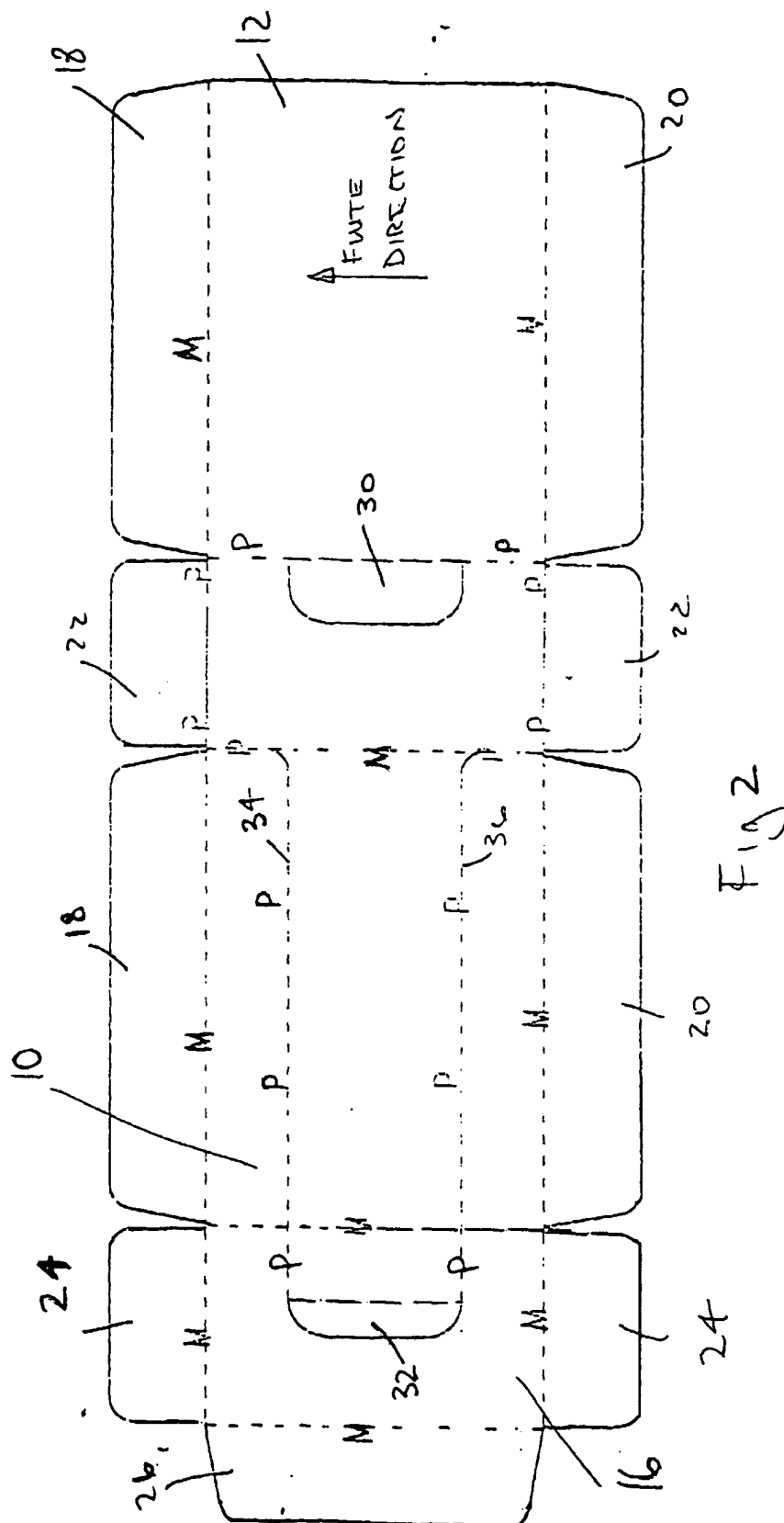
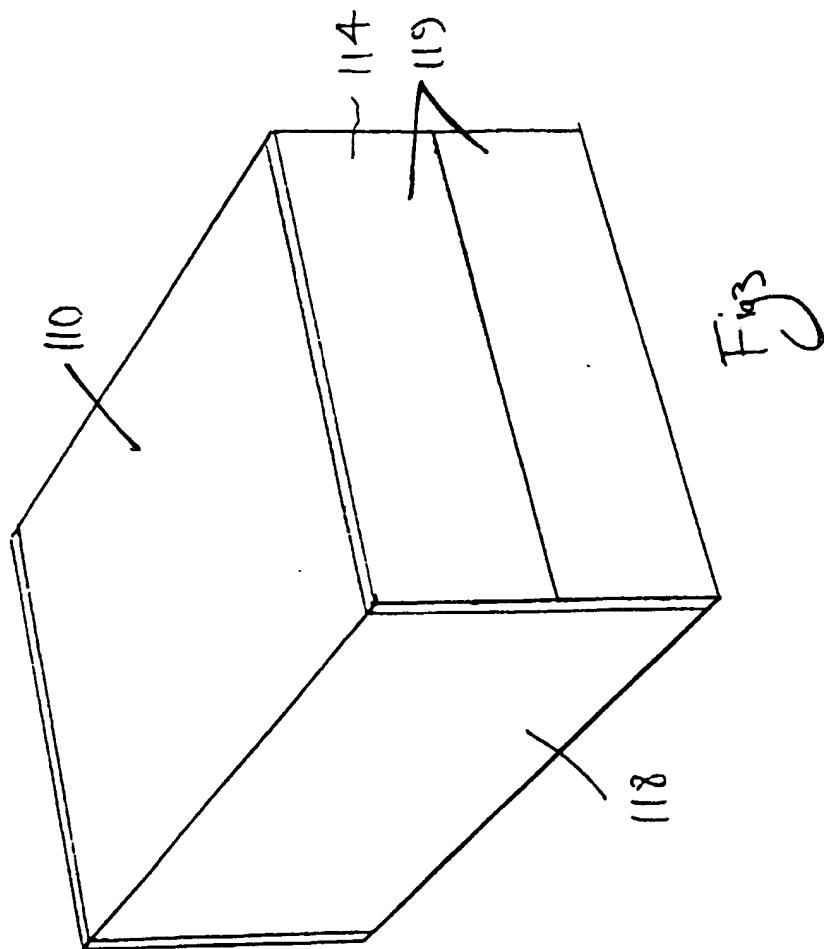


Fig 2



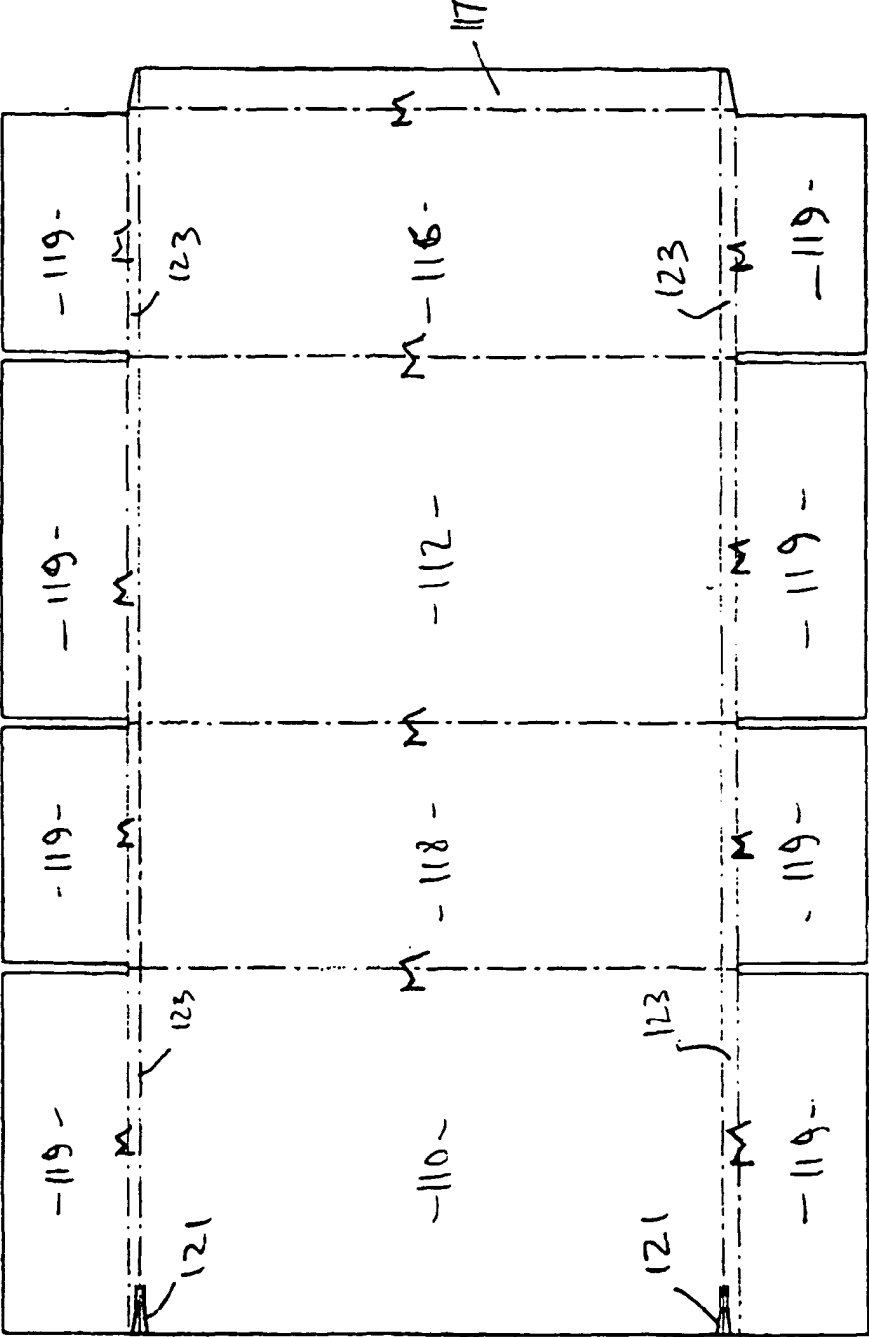
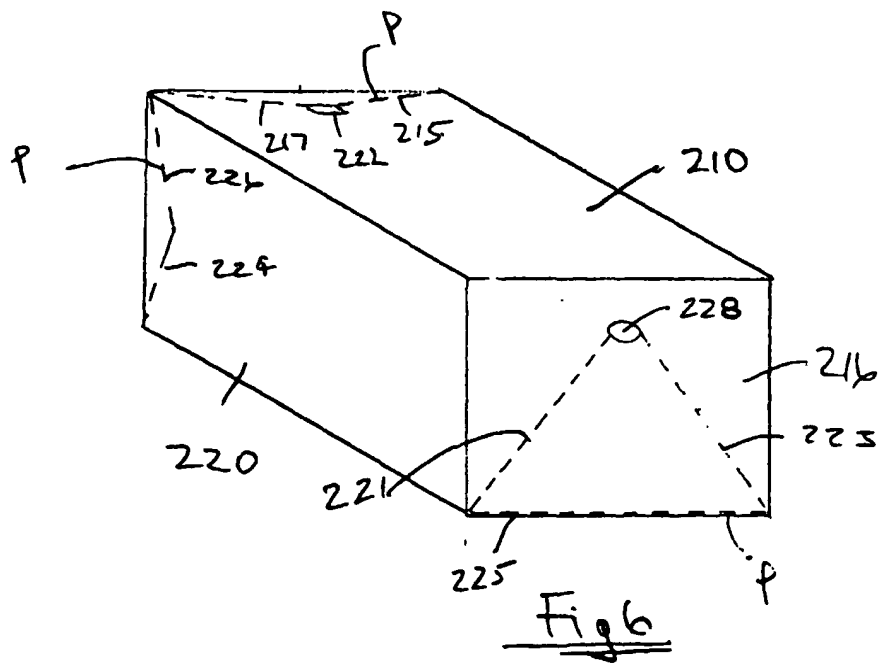
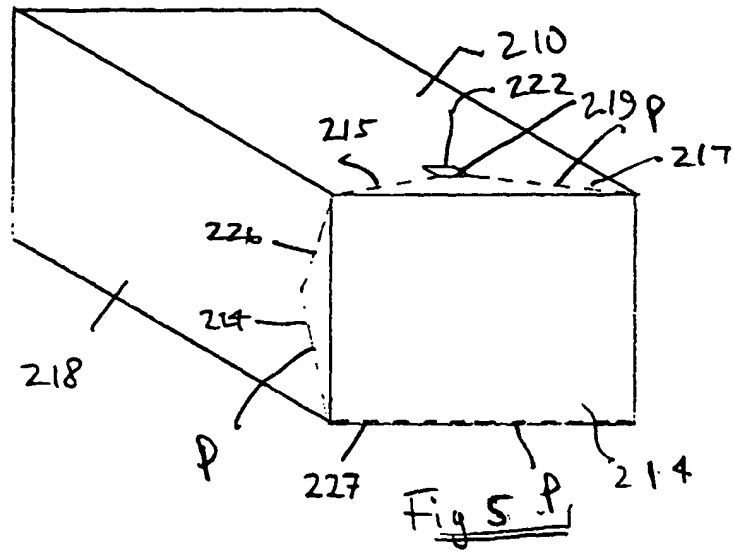


Fig 4



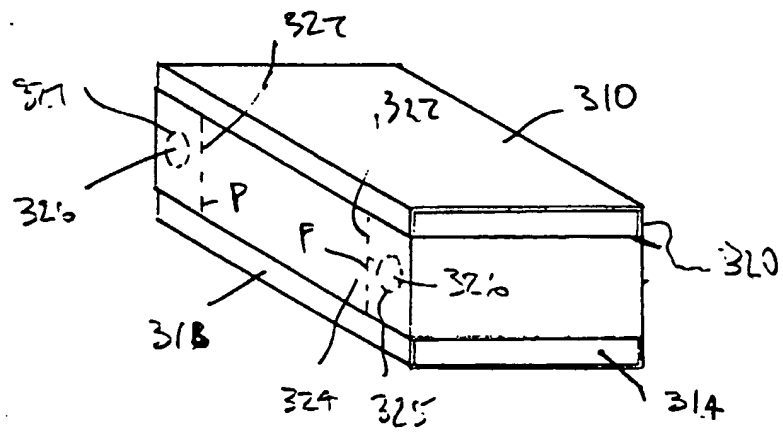


Fig 7

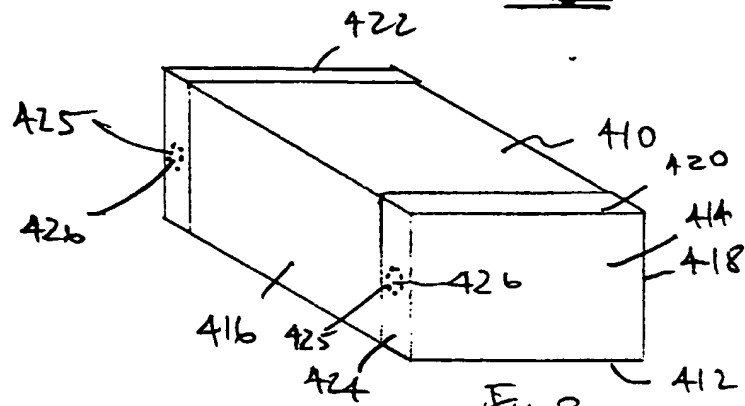


Fig 8

